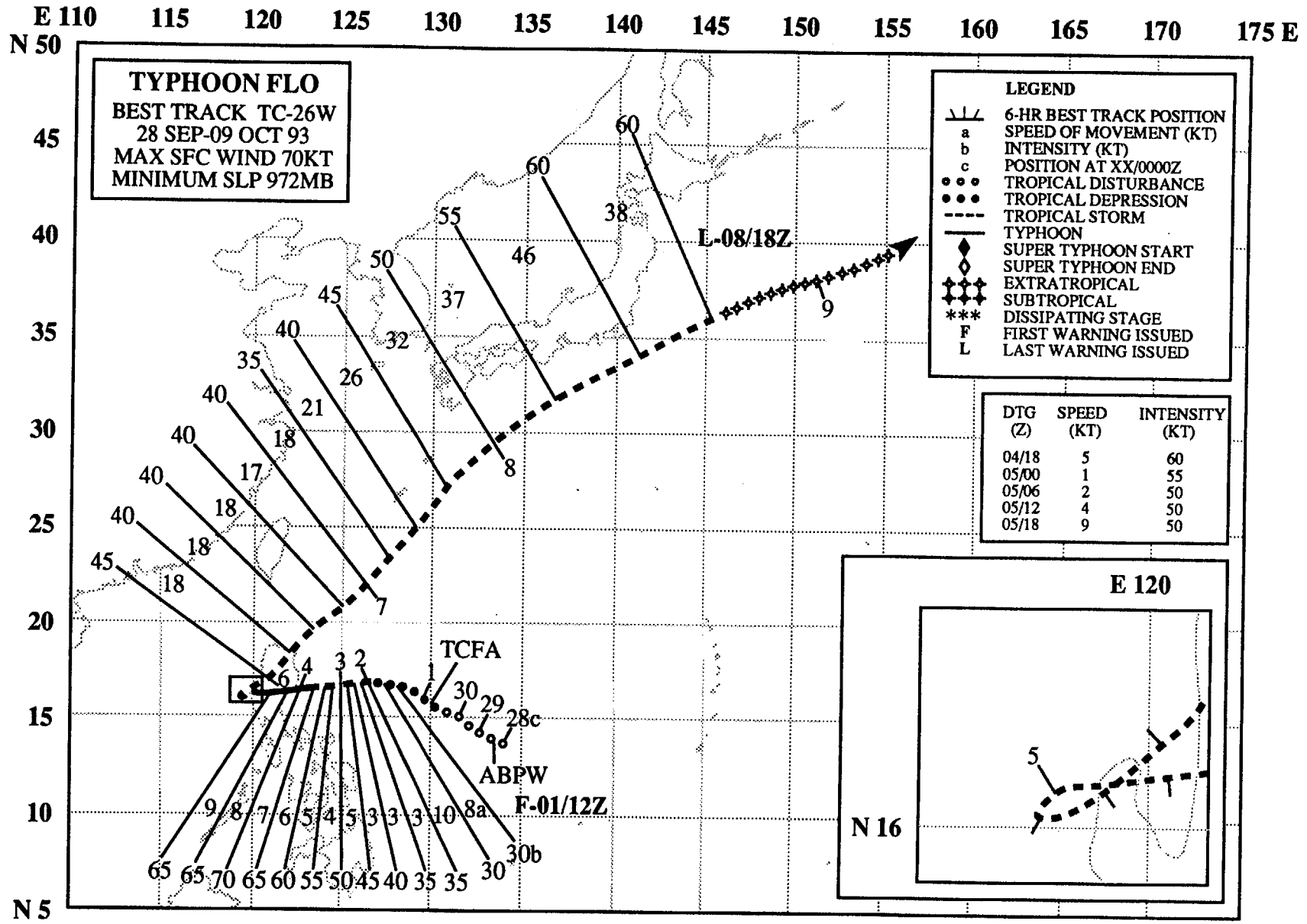
TYPHOON FLO
BEST TRACK TC-26W
28 SEP-09 OCT 93
MAX SFC WIND 70KT
MINIMUM SLP 972MB
LEGEND
6-HR BEST TRACK POSITION
a SPEED OF MOVEMENT (KT)
b INTENSITY (KT)
c POSITION AT XX/0000Z
TROPICAL DISTURBANCE
TROPICAL DEPRESSION
TROPICAL STORM
TYPHOON
SUPER TYPHOON START
SUPER TYPHOON END
EXTRATROPICAL
SUBTROPICAL
*** DISSIPATING STAGE
F FIRST WARNING ISSUED
L LAST WARNING ISSUED
DTG (Z) SPEED (KT) INTENSITY (KT)
04/18 5 60
05/00 1 55
05/06 2 50
05/12 4 50
05/18 9 50
L-08/18Z
TCFA
ABPW
F-01/12Z
E 120
N 16
E 110 115 120 125 130 135 140 145 150 155 160 165 170 175 E
N 50 45 40 35 30 25 20 15 10 N 5

TYPHOON FLO (26W)

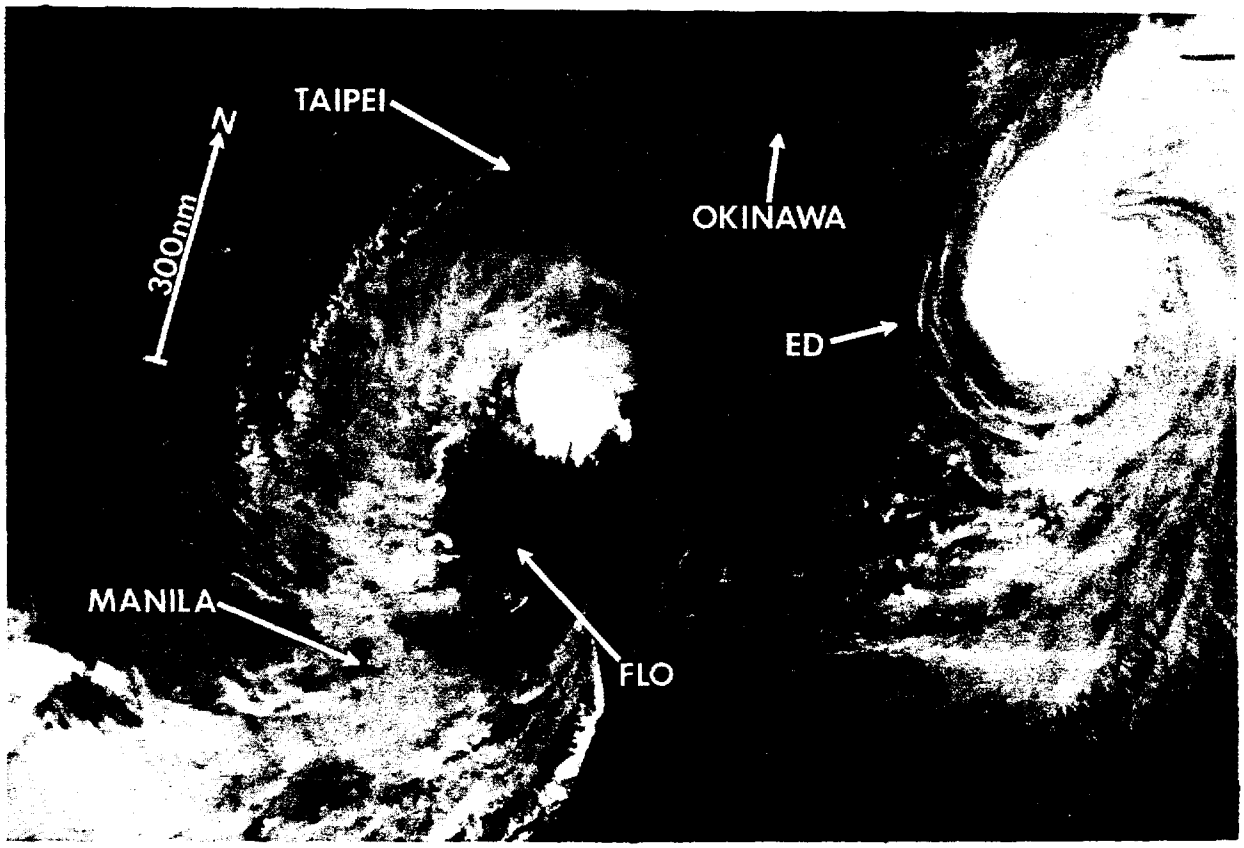

Figure 3-26-1 With the low-level most probably overland and without any central convection, Flo begins its rapid acceleration to the northeast in tandem with Ed (25W) (060640Z October infrared DMSP imagery).

I. HIGHLIGHTS

Forming in the Philippine Sea west Ed (25W), Flo was notable for its binary interaction with Ed. An unanticipated stall, sharp recurvature west of Luzon, and rapid acceleration to the northeast resulted in forecast errors which were the largest of 1993.

II. CHRONOLOGY OF EVENTS

September

280600Z - The disturbance was first mentioned in the Significant Tropical Weather Advisory as a persistent area of convection located within the monsoon trough in the Philippine Sea.

301900Z - Increased deep convection around the well defined low-level circulation center led to issuance of a Tropical Cyclone Formation Alert.

October

011200Z - The first warning was based on a satellite Intensity estimate of 25 kt (13 m/sec).

020000Z - Flo was upgraded to a tropical storm based on the formation of a ragged CDO and resulting satellite intensity estimate of 35 kt (17 m/sec).

031800Z - The appearance of eye and satellite intensity estimate of 65 kt (33 m/sec) led JTWC to upgrade Flo to a typhoon.

051200Z - Flo unexpectedly recurved, striking Luzon from the west, and afterward, accelerated rapidly toward the northeast.
081800Z - The final warning was issued on Flo as it transitioned into an extratropical low.

III. IMPACT

Torrential rains associated with Flo caused widespread flooding across the island of Luzon in the Philippines. Press reports indicated that at least 50 people were killed or missing, and over 300,000 were evacuated to higher ground. The accelerated motion of Flo, after recurving, to an average speed of 46 kt (85 km/hr) resulted in winds of up to 65 kt (33 m/sec) in the dangerous semicircle. The USS Independence battle group was caught in the dangerous semicircle.

IV. DISCUSSION

A binary interaction occurred between Ed and Flo and appears in the preceding write up on Super Typhoon Ed (25W). With regard to forecast errors, Flo generated the largest 72-hour forecast error — 1732 nm (154 km) — of the year. Flo's stall, loss of central convection (Figure 3-26-1), recurvature and subsequent rapid acceleration compounded the forecasting problem. Objective guidance, including the dynamic models, had difficulty handling the track changes. As these events occurred, forecasters indicated low confidence in their forecasts.